

REMARKS

This amendment is in response to the Final Office Action mailed on April 26, 2004. Claims 1-24 remain in the application. Claims 1, 3 and 5-7 were allowed and claims 2, 4 and 8-24 were rejected. Claim s16 and 23 have now been amended in response to the Examiner's rejections in the Office actions of 4/26/04 and 1/22/04.

The Examiner is urged to enter this amendment for the following reasons:

1. It is made in response to a new rejection made in the Final Rejection, which rejection was made to an amendment in response to the Examiner's previous rejection based on lack of clear antecedent basis.
2. It reduces the number of issues and places the claim in condition for allowance or in better condition for an appeal.
3. It does not require further searching of the prior art.

Claim 16 has been amended to remove "at least some of the holes having a diameter" and "the diameter of at least some of the holes" and to refer to the hole size instead of hole diameter. This portion of the 5/12/04 amendment to claim 16 was made to correct an antecedent basis rejection. Basis for the current amendment to claim 16 can be found in the specification as follows:

Page 5, first and second full paragraphs, "screen or perforated plate (screen) having smaller hole sizes and/or hole densities",

Page 7, lines 4-13, "When the term hole density is used herein, it means the number of holes per unit square inch of screen area in the portion of the screen being described. While round holes are preferred and are used to describe the present invention, other shapes of holes can be used in the present invention. Hole density is directly proportional percent open area in the portion of the screen being described. The hole size, as used herein to describe the invention, means

the diameter of the holes in the screen, or a portion of the screen, or the area of the holes, unless otherwise defined.", and

Paragraph spanning pages 17 and 18, "to reduce the head of glass on the tip plate to that suitable to allow the tips with the larger bore to run fine fiber at a normal fiber pulling speed." "--- the new screen, to be laid on top of the conventional screen, will have a hole density and hole diameter that produces a substantially greater resistance to flow of the molten material than the conventional screen. The hole diameter and hole density uniform across the screen or it can be non-uniform to correct cold or hot end problems or other tip plate temperature profile problems if they exist ---."

The invention of the present claims involves the manipulation of the hole area per unit area of screen in all or end and central or mid portions of a bushing screen, namely a central portion and end portions, the screen being spaced above a tip plate in a fiberizing bushing. The purpose of the manipulation of the hole area per unit area of screen is to address various problems, or needs including temperature profile of the tip or orifice plate and flexibility to manufacture different products without having to change the bushing, thus improving the usefulness and productivity of bushings.

When a melting tank such as the melting tank 2 shown in Figure 1, is being pulled hard, i.e. operated close to maximum capacity, the molten glass coming out of the tank into a channel 4 has a higher temperature than desired and also comes out of the channel 4 into the bushing legs 6, 8 hotter than desired, see Figure 1 and page 1 of the specification, the last sentence of the first full paragraph. As a result, the hottest glass dives into the orifices in the legs leading to the first bushing positions, the position closest to, next to the channel 4 causing the tip plate temperature profile in the bushing located in this position and causing the fiber break rate to increase, reducing productivity, see page 2, the first two full paragraphs. As pointed out in the last paragraph on page 9, "This hottest glass tends to dive into the first, and sometimes the second, (emphasis added) bushing positions 12 and 16 in the bushing legs." Thus, the channel positions are those positions which are affected by the hotter than desired glass coming out of the channel into the bushing legs, the position in each leg closest to the channel, and sometimes the second closest bushing position in the leg, the next closest position to the

channel. The present invention also includes other applications for a screen having different hole sizes or hole densities in different portions of the screen, or in a second screen compared with a first screen, such as converting a fiberizing bushing made to produce coarse fiber to a bushing for making fine fiber by merely adding a second screen according to the present invention, see page 17-20.

The Examiner rejected claims 16 – 20 under 35 USC 112, first paragraph, as failing to comply with the written description requirement because of the term “at least some of the holes having a diameter”, the Examiner stating that the specification does not support “at least some of the holes having a diameter”. Applicants disagree because of the disclosure restated above from pages 5 and 7 of the specification. Paragraph 5 states the use of a screen having smaller hole sizes and/or hole densities and later it is explained that the use of smaller hole sizes, smaller hole densities or both is done to increase the resistance to flow of molten glass through the screen or portion of the screen. On page 7, lines 4-6, it is stated that although round holes, are used for purpose of illustration of the invention, other shaped holes can be used in the invention, and further that hole size means the diameter of the holes or the area of the holes. Thus one of ordinary skill in the art would reasonably conclude that not all of the holes need have a diameter. However, to simplify the claim, diameter is changed to size which is more meaningful because it is the area of the holes and not their shape that is critical according to the disclosure in the specification. Applicants believe that claim 16 fully complies with 35 USC 112, first paragraph, and respectfully requests the Examiner to withdraw this rejection and to allow all of the claims.

The Examiner rejected claims 2, 4, and 8-24 under 35 USC 112, second paragraph as being indefinite for the following reasons.

1. Claim 16 because line 5 requires a uniform hole size and density, but line 6 only required at least some of the holes having the diameter. The Examiner urged that this is not consistent, but Applicants disagree. The amended claim 16 removes diameter and uses hole size instead for the reason given above, but as pointed out in the statement in lines 4-7 of page 7 of the specification, holes having other than round shape can be used in the invention. One of ordinary skill in the art would reasonably conclude from this statement that all of the holes, none of the holes or some of the holes could be round.

2. Claim 23 because of an apparent period after “channel” in line 5. The period was a typo error and should have been a comma – the present amended claim contains this correction.

3. Claims 2, 4, 8-15 and 21-24 because of the word “portions” in the terms “end portion”, “end portions”, “central portion”, etc., urging that the meaning of the term “portions” is indefinite because the scope cannot be determined. The Examiner seems to believe that the Board of Appeals held that the term “portion” was specific, i. e. a specific size, percentage, etc. Applicants disagree because the Board of Appeals did not so state. Instead the Board of Appeals held that the Examiner could not, having the benefit Applicants’ disclosure, arbitrarily devise an embodiment or embodiments and then reject Applicants’ claims based on this embodiment. The Board of Appeals did not agree with the Examiners interpretation of the teaching of the Stalego reference, but the Examiner seems to continue to press that interpretation, now in the form of a 35 USC 112, second paragraph rejection. The Board of Appeals held that Stalego did not teach or reasonably suggest a bushing screen having a low flow center portion and two higher flow end portions, one end portion having an area larger than the other end portion – note that the Board used the terms center portion and end portions and did not indicate any indefiniteness with these terms when using them. The Board of Appeals decision regarding the 35 USC 103 rejection was further based on the fact that the Examiner had not provided any evidence to support one or more embodiments urged as prior art.

The Examiner urges that the Board of appeals held that the terms end portion, end portions, etc. were indefinite, but the Board of Appeals decision did not so state, and the Examiner has provided no evidence to support the statement that the Board of Appeals were thinking of these terms when using the term “various terms”. On the contrary, the Board of Appeals went further in the same sentence to say that the “various terms” were indefinite in that they lacked antecedent basis, and then in the same paragraph set forth the type of terms they meant. The terms “end portion” and “central portion” were not mentioned. Also, these terms are not being objected to by the Examiner because they do not have antecedent basis. The Examiner’s position that the Board of Appeals decision mandated the rejection of claims containing “end portion(s)” under 35 USC 112, second paragraph is without merit.

The terms "end portion" and "central portion" or end region, peripheral region and center or central region are used extensively in claims in issued patents to define portions of an object. For example, US Pat. No. 5,935,291 describes a bushing screen (perforated plate) in terms including central region and peripheral region, see claim 1, part C. Is "region" any different in definiteness than "portion"? The Examiner agrees that the Applicants need not have dimensions of the various portions of the screen, such as would be present in a blueprint, in the claim to meet the requirements of 35USC112, second paragraph. Also, the present invention is useful on various size bushings, number of tips and tip spacings, and the dimensions of the "end portion" and central portion" would change with different size bushings as well as with different molten glass situations as described herein.

The Examiner has not suggested what additional word or words he believes is needed in claims 2 and 16, even when invited to do so. The Examiner states that he cannot determine the scope of "end portion" and "central portion", but Applicants do not understand this statement in view of Figures 5-9 and the description and objectives of the invention provided in the disclosure. For example, the problems and needs being addressed by the invention is provided on pages 11-12, 14-15, and 17-20 and the disclosure teaches one of ordinary skill in the art how to make and use the invention to achieve those objectives. The invention does not address just one problem or objective or just one process condition, but rather has several uses as disclosed and addresses many different conditions that cause problems in manufacture of glass fiber. For example, the first full paragraph on page 16 teaches how to address one condition where the hot streak of glass is not centered in the leg when it dives into the orifice and provides an embodiment where one end portion is larger than the opposite end portion in area. In the disclosure it is taught that the area of the end portions and the central portion will vary with different conditions in the process and given this disclosure and details of certain embodiments, it is within the skill of an ordinary artisan to adjust the areas of the end portions and the central portion, as well as the percent open area of each to address the particular situation he is using the invention to address.

The Examiner urges that the terms "end portions" and "central portion" are indefinite based on the Board of Appeals decision earlier in the prosecution of this application. The Board of Appeals did not say that these terms were indefinite. The

Examiner urges that because the Board of Appeals did not affirm the rejections under 35 USC 102 and 35 USC 103, that the Board of Appeals somehow supports the Examiner's current position. The Board of Appeals reversed those rejections because the Examiner had not presented the evidence needed to support the allegations of anticipation and obviousness, no more and no less. The Board of Appeals did not say that the Examiner could not arbitrarily designate various portions of the screen so that one end portion is smaller in area than another end portion, but instead said that the Examiner failed to identify a teaching in the prior art on which to support this condition or conclusion (arbitrary designation). In all statements about these rejections, the Board of Appeals held that insufficient evidence of prior art was the reason for the reversal. It is obvious to one of ordinary skill in the art that the areas of the "end portion" and the "mid or central portion" will vary as the size of the bushing changes. It is well known that different size bushings, i. e. different number of tips, are used to make different products and on different furnaces or bushing legs due to the technology of that bushing leg. Improvements are being made every year, but furnaces, and bushing legs, are rebuilt and brought up to date typically every 5 years or more. The Examiner admits that applicant is not be required to specify the area of the end portions or the mid or central portions.

The Examiner stated that "Even if it was Applicant's intention for the description to be a definition, there is a lack of clear indication that it was to be a definition. Applicant does not understand this statement or the explanation given by the Examiner for this statement. Definiteness of language employed in the claims must be analyzed, not in a vacuum, but always in light of the disclosure and the prior art as it would be interpreted by one possessing an ordinary level of skill in the pertinent art. Again, the Board of Appeals held that Stalego does not teach, or reasonably suggest, a bushing screen having a lower flow central region and higher flow end regions and that the Examiner did not provide support for the position that such would have been obvious or inherent in the teachings of Stalego. Is it possible that the Examiner is either ignoring this or is continuing to disagree with this holding? The Examiner urges that the Board of Appeals determined that Stalago, 3,810,741, did not teach "end portions", but I don't find that stated in the Board of Appeal's decision in Appeal No. 2000-0035. The Board of Appeals held that it was not shown that the teaching of Stalago anticipated the invention

described in claim 2 on appeal and that a prima facie case of obviousness under 35 USC 103 in view of the teaching of Stalago, had not been presented. Applicant has always described the terms "end portions" and center or mid portion" in a manner consistent with the way these terms are described in the specification. The Examiner seems to be misinterpreting the Board of Appeals decision and the reasons they stated for their decision as mentioned above.

The Examiner urges that Applicant has refused to indicate what "end portion" means. This allegation lacks supporting evidence. The specification describes "end portion" as being on one side of the "central or mid portion", see the paragraph starting on page 12 and ending at the top of page 13 and the rest of the description of Figures 6, 6A and 6B on pages 13 and 14. The Examiner never rejected the claims as being indefinite because of these terms until after the Board of Appeals decision, and the Board of Appeals never mentioned these terms as being indefinite although they did mention several other terms. The Examiner seems to say that prior to the Board of Appeals decision he agreed with Applicants' position on these terms, but believes that the Board of Appeals decision forces a different position. Applicant disagrees and believes the Examiner is misinterpreting the reasons for decision.

Applicants believe that all of the claims meet the requirements of 35 USC 112 and respectfully request the Examiner to withdraw the rejections and to allow all of the claims. If the Examiner believes that further amendment is required, the Examiner is invited to call Applicants' attorney at 303-978-3927 to discuss for the purpose of expediting the disposal of this very old, 1997, application.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Robert D. Touslee", written over a horizontal line.

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